

SEMICONDUCTOR LASER DEVICE

Patent Number: JP9129974
 Publication date: 1997-05-16
 Inventor(s): TANAKA TOSHIKI
 Applicant(s): HITACHI LTD
 Requested Patent: ☐ JP9129974
 Application Number: JP19950280155 19951027
 Priority Number(s):
 IPC Classification: H01S3/18; H01L33/00
 EC Classification:
 Equivalents:

Abstract

PROBLEM TO BE SOLVED: To provide a low-voltage indigo laser having low electrical contact resistance, which includes a contact layer of a nitride material having an increased concentration of p-type carriers.
SOLUTION: Layers 2 and 3 are grown on a sapphire substrate 1 by metal organic vapor phase epitaxy. Lithography and etching are carried out to form an insulating mask for selective growth, and layers 4-8 are selectively grown. Another insulating mask is formed and the layer 8 is selectively grown into a periodic regular pyramid with a hexagonal base. The resulting structure is furnished with p- and n-electrodes by deposition and cleaved in a direction perpendicular to the waveguide stripes. Since the contact resistance between the p-contact layer and the p-electrode is decreased, operating voltage can be decreased to 3.2-3.4V compared with 3.6V for convention devices, when injection current is 20mA.

Data supplied from the esp@cenet database - I2